What is claimed is:

1. A test apparatus for visual display of audio parameters of multiple audio channels of a signal, comprising:

an input to the test apparatus for receiving a signal comprising at least three audio channels, wherein one of the audio channels at least temporarily forms a reference channel for comparison by the test apparatus with at least two other said channels, each of said at least two other channels at least temporarily forming a relative channel for comparison of said audio parameters between the relative channel and the reference channel;

an amplitude measurement circuit operable to determine a relative amplitude of the relative channel versus the reference channel;

a phase comparator operable to determine a relative phase difference of the relative channel versus the reference channel;

a visual display responsive to the relative amplitude and the relative phase difference, wherein the relative amplitude and the relative phase difference are presented on a same graphic plot on the visual display.

2. The test apparatus of claim 1, wherein the relative amplitude and relative phase are presented in the graphic plot by positions plotted for audio samples for the channels, a two dimensional plot for said relative channel presenting relative amplitude and relative phase on different coordinates of the graphic plot.

3. The test apparatus of claim 2, comprising a separate graphic plot for each of at least two said relative channels.

4. The test apparatus of claim 3, further comprising a graphic display of an absolute parameter for each of a plurality of channels of the signal, wherein the separate graphic plots for said at least two relative channels are

respectively located to reference the graphic display of the absolute parameter for a corresponding one of the relative audio channels.

5. The test apparatus of claim 2, comprising a graphic display having a polar plot segmented to provide an area for plotting each of the relative channels, wherein a phase difference between the respective relative channel and the reference channel, is plotted to a radius of the polar plot in a segment corresponding to each of the relative channels, and a relative amplitude of the relative channel compared to the reference channel, is plotted to an angle with respect to a reference angle in said segment.

6. The test apparatus of claim 5, further comprising a meter line for plotting signal amplitude of each of the plurality of channels, the meter lines for said plurality of channels being oriented to radiate from respective ones of the segments, each of the meter lines substantially corresponding to the reference angle in said respective one of the segments.

7. The test apparatus of claim 4, wherein the graphic display contains a marker designating the reference channel, and wherein selection of the reference channel from among the plural audio channels is changeable by a user selection input.

8. The test apparatus of claim 1, further comprising a storage device operable to store for a period of time a log representing at least one of values of samples, relative amplitude and phase values, and processed data based on at least one of the sample values and relative amplitude and phase values, and further comprising at least a mode of the visual display wherein the log is plotted.

9. The test apparatus of claim 8, wherein said at least one of the relative amplitude and the relative phase values are reduced by at least one of

decimation and averaging, for providing alternative plots over different lengths of time.

10. The test apparatus of claim 9, wherein at least two amplitude values and at least one phase value are selectively displayable for a length of time of at least one minute.

11. A test apparatus for displaying audio parameters for a plurality of associated channels, comprising:

means for providing time sampled values of signals on the plurality of channels;

a mathematical processing circuit operable to provide from the sampled values at least one of an absolute amplitude value for each of at least two said channels, and relative comparisons of at least one of amplitude and phase for said at least two channels;

a display generator having at least one mode wherein the amplitude and phase values of the at least two channels are simultaneously graphically displayed.

12. The test apparatus of claim 11, further comprising a storage device for storing at least one of the sampled values over time and processed values derived from the sampled values over time, wherein the display generator has at least one mode for displaying a time log of contents of the storage device over time.

13. The test apparatus of claim 12, wherein the display generator is operable to display a time period of at least one minute.

14. The test apparatus of claim 11, wherein the display generator is configured to display selectively a plot of current data chosen from the group consisting of absolute channel amplitude, relative channel amplitude between identified channel pairs, relative phase between identified channel pairs, relative

channel amplitude versus any selected one of the channels, relative channel phase versus any selected one of the channels, and a time plot of previous channel amplitude and phase data.

15. The test apparatus of claim 11, wherein at least one mode of the display generator includes a graphic plot wherein a relative amplitude and a relative phase for at least one relative channel are presented in the graphic plot by points plotted for audio samples for at least the relative channel and the deemed reference channel, said graphic plot presenting a two dimensional plot wherein said relative amplitude and said relative phase are plotted along different axes.

16. The test apparatus of claim 11, comprising a graphic display of signal amplitude versus a variable position along a line for each of a plurality of said channels, wherein one of the relative amplitude and the relative phase for at least the relative channel is plotted as a point along an extension of the line and the other of the relative amplitude and phase is plotted as a point lateral to the line.

17. The test apparatus of claim 16, wherein the lines plotting signal amplitude for each of the plurality of channels are presented in a radiating pattern relative to an origin, the lines being spaced radially from the origin by a plot wherein the relative amplitude of at least two respective relative channels is plotted as an angular deflection from a respective one of the lines, and the relative phase of each respective channel is plotted along a line parallel to said respective one of the lines.

18. The test apparatus of claim 15, wherein the lines plotting signal amplitude for each of the plurality of channels are representing in a radiating pattern space from the origin by a polar plot having angular sectors associated with each of the lines plotting signal amplitude, each sector providing a polar plot of the relative phase of the associated channel, represented as a radius

from the origin, and the relative amplitude of the associated channel, represented as an angular deflection from the associated line representing signal amplitude.

19. The test apparatus of claim 18, wherein the graphic display contains a marker designating the reference channel, and wherein selection of the reference channel from among the plural audio channels is changeable by at least one user selection input.

20. A method for representing an audio signal having multiple channels associated with a program, comprising the steps of:

providing digitized amplitude time samples for a plurality of said channels;

at least temporarily deeming one of the channels as a reference channel for at least two other of the channels as relative channels;

determining a relative amplitude of the relative channel versus the reference channel;

determining a relative phase of the relative channel versus the reference channel;

changing the channel deemed as the reference channel; and,

providing a display having at least one mode wherein at least one of:

the relative amplitude and relative phase are plotted for current samples together with an absolute amplitude;

two of the absolute amplitude and one said relative phase is plotted over a period of time.

21. The method of claim 20, further comprising:

displaying spatial line plots of signal amplitude in a pattern of varying length lines corresponding to signal amplitude for each of a plurality of channels;

displaying the relative amplitude and relative phase of at least one said relative channel in a two dimensional plot in which the relative amplitude and

the relative phase are along different axes and the two dimensional plot is associated with the corresponding spatial line plot for the at least one said relative channel.

22. The method of claim 21, further comprising placing the spatial line plots in a radiating pattern around an origin representing nominal speaker positions for playback of the channels, spacing the spatial lines plots by a radial distance from the origin, and plotting in the radial distance a polar plot of relative amplitude and relative phase for at least two said relative channels.

23. The method of claim 22, further comprising providing said polar plot for a plurality of relative channels, the respective polar plot for a given channel being plotted in an angular sector substantially aligned with an associated one of the line plots.

24. The method of claim 23, wherein relative phase between zero and 180° is plotted to a distance from the origin in the angular sector, and relative amplitude is plotted as circumferential displacement along an angle above and below an angle of the associated one of the line plots.

25. The method of claim 24, further comprising presenting as an alarm condition a distinct color representation of points having a relative phase that is within a predetermined phase difference of 180°.